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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/779,030	02/08/2001	Barry Billig	SD-204A	4437

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EXAMINER	
RIDLEY, BASIA ANNA	

ART UNIT	PAPER NUMBER
1764	

DATE MAILED: 01/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/779,030	BILLIG ET AL.	
	Examiner	Art Unit	
	Basia Ridley	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 October 2004 and 29 October 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 October 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings were received on 29 October 2004. These drawings are acceptable.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 and 3 rejected under 35 U.S.C. 102(b) as being anticipated by Langley (USP 4,847,393).

Regarding claims 1 and 3 Langley discloses a reactor and heat exchanger cooler assembly comprising:

- a tubular reactor (1) having an outlet head (drawing);
- reaction tubes (2) packed with catalyst within said reactor supported by an outlet end tube sheet (3);
- a tubular heat exchanger (11) having lower end tube sheet (13) supporting tubes (12) within said exchanger (11);
- said heat exchanger being integrally affixed to said reactor outlet head (drawing);
- said reactor outlet head having an opening (drawing) for the passage of the reaction gas mixture from the reactor (1) to said exchanger (11) and through tubes (12) in said heat exchanger (11);

- wherein said reaction gases are cooled by indirect heat exchange with a heat exchange fluid introduced into said heat exchanger (C4/L6-10);
- wherein the reactor is packed with a supported silver catalyst (C3/L50-52).

Since the drawing in Langley only shows partial view of the reactor and the heat exchanger, neither the inlet head of the reactor nor the inlet end tube sheet of the reactor nor the upper tube sheet of the heat exchanger are shown, but said elements are inherent in the reactor of Langley.

The examiner notes that the term "integrally affixed" does not exclude two units connected by a pipe to make a whole system.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Langley (USP 4,847,393).

Alternatively, if the term "integrally affixed" is taken to exclude any pipe between the heat exchanger and said reactor outlet head, so that the units are welded directly together it would have been obvious to one of ordinary skill in the art at the time the invention was made to integrally affix the heat exchanger to the outlet head of the reactor of Langley, since such modification would have involved making elements integral. Making elements integral is generally recognized as being within the level of ordinary skill in the art. *In re Larson*, 340 F.2d

965, 968, 144 USPQ 347, 349 (CCPA 1965). Additional motivation to weld the heat exchanger directly to the outlet reactor head is teaching in Langley, see C2/L61-63, which states that during ethylene oxide production it is preferable that the cooling takes place immediately after passage through the reactor.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Langley (USP 4,847,393), as applied to claim 1 above, in view of Ozero et al. (USP 4,921,681) or Sawada et al. (USP 5,292,904).

Regarding claim 2 Langley discloses all of the claim limitations as set forth above. Additionally the reference teaches that disclosed apparatus is used for production of ethylene oxide (abstract) and that a cooling fluid is used for cooling the tubes in both, the reactor and the heat exchanger (C3/L50-C4/L9), but the reference does not disclose any specific examples of cooling fluid which can be used. Both, Ozero et al. and Sawada et al. teach that reactors and heat exchangers used for production of ethylene oxide can be successfully cooled by water (see Ozero et al. (C3/L6-15) or Sawada et al. (C4/L14-56)). Therefore, use of water as the cooling fluid in the reactor and heat exchanger of Langley would be obvious to one of ordinary skill in the art at the time of the invention, because it would amount to nothing more than a use of a known material for its intended use in a known environment to accomplish entirely expected result.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Response to Arguments

8. Applicant's arguments filed on 7 October 2004 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Basia Ridley, whose telephone number is (571) 272-1453.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola, can be reached on (571) 272-1444.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Technical Center 1700 General Information Telephone No. is (571) 272-1700. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Questions on access to the Private PAIR system should be directed to the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

Basia Ridley
Examiner
Art Unit 1764

BR
January 24, 2005